

CHAPTER 18 - WOODLAND AND TIMBER RESOURCES

18.1 RESOURCE OVERVIEW

Woodland resources are generally defined as those tree species that are used as non-sawtimber products and are sold in units other than board feet. The woodland resources within the Moab Field Office (FO) planning area (planning area) consist primarily of pinyon pine and juniper; woodland composition is dominated by the pinyon-juniper plant community, with its varying shrub and forb components. Two-needle pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) are the most common woodland species of their type and are widespread throughout the planning area. Most of the pinyon-juniper grows at lower elevations, where precipitation is insufficient for commercial timber species. Annual precipitation typically ranges between 10 and 15 inches in pinyon-juniper woodlands, and tree species in these communities have evolved both cold and drought resistance.

Typically, the pinyon-juniper plant community occupies an elevation zone from approximately 4,500 feet to 7,500 feet. Pinyon dominates at higher elevation within the zone and tends to form closed-canopy stands with a shrub component commonly including oaks and mountain mahogany and some grasses. Seedlings are highly tolerant of shade and establish best under canopy cover. Pinyon trees begin producing seeds as early as 25 years of age, but not regularly or in large quantities until 75–100 years of age.

Juniper trees tend to grow and dominate at lower elevations, in more arid areas, as its scaled foliage allows it to conserve water more effectively than pinyon pine. Seedlings are shade tolerant, and seedlings establish quickly in cut or burned areas. Junipers begin producing seeds as early as 10 years of age, but not regularly or in large enough quantities to be effective seed sources until 100 years of age. Juniper-dominated woodlands tend to include open savannas of scattered trees without accompanying shrub communities, except in areas where sagebrush has become dominant as a consequence of overgrazing. A large transition zone (an ecotone) exists between the juniper and pinyon elevation extremes in which the two species are codominant.

The woodland resources are used for firewood, fence posts, and Christmas trees, and also have value for watershed, wildlife habitat, recreational, and visual resources. There is some commercial harvesting (approximately 5 percent or less) of this resource.

Cottonwood (*Populus deltoids*) is an additional component of woodland resources that grows in riparian areas. Cottonwood is critical to the proper functioning of riparian systems in that it provides shade and wildlife habitat.

For the management and planning purposes of this AMS, timber resources have been combined with woodland resources. Timber resources within the planning area consist of small stands of forest species comprising primarily ponderosa pine (*Pinus ponderosa*), mountain fir, aspen (*Populus tremuloides*), and an aspen/conifer mix. These stands typically grow at higher elevations of approximately 8,000 to 10,000 feet, where annual precipitation is between 25 and 30 inches. In the planning area, these stands are in the Book Cliffs, in the northernmost portion of the planning area. The quantities of timber in the planning area are both inaccessible and too limited for either private or commercial harvesting. Figure 18-1 depicts the areas within the planning area where woodland and timber resources are concentrated.

18.2 SPECIFIC MANDATES AND AUTHORITY

Woodland resources are managed under federal and state laws and regulations. The major applicable laws and regulations are:

- 43 CFR 5400, Sales of Forest Products – This federal regulation establishes procedures for disposing of forest products through sales or free use.
- 43 CFR 9230, Trespass – This federal regulation establishes procedures for determining kinds of trespass and the penalties that can be assessed for the unauthorized removal of woodland products from public lands.
- The Material Sales Act of July 31, 1947 – This federal law authorizes the disposal of timber and other vegetation resources on public lands, including lands contained within unpatented mining claims after July 23, 1955.
- Utah Transportation of Forest Products Act of 1983 – This state law requires proof of ownership of forest products being transported, making it illegal to transport forest products off of BLM-managed land without a proper permit.
- 5400 Utah State Office Supplemental Guidance of 1986 – These state specific BLM guidelines provide direction and procedures for resource management planning, activity planning, and sales of woodland products in Utah.

18.3 CURRENT MANAGEMENT PRACTICES

The current management of woodland resources within the planning area is guided by decisions made in the Resource Management Plan (RMP) for the Grand Resource Area. The RMP states "that permits for harvest of woodland products for noncommercial use will continue to be sold to the public consistent with the availability of woodland products and the protection of sensitive resource values" (BLM 1983).

Since the approval of the current RMP, woodland management objectives have changed for the Moab FO: 1) a greater emphasis is now being placed on pinyon-juniper management for long-term sustainability of the resource; 2) the Fire Program is assessing woodland conditions for potential re-treatments in past treatment areas and as part of the hazardous fuels reduction program; 3) infestations of the woodland resource by the Ips engraver beetle resulting from sustained drought conditions are being examined; and 4) there is an increase in active management of the resource (Jackson 2003).

The Moab FO currently manages woodland products by controlling harvests and sales, and sells woodland products in informally designated areas for fuelwood, fence posts, Christmas trees, live pinyon transplants, and other woodland species for landscaping. Fuelwood harvests are limited to pinyon and juniper, and on-site harvests of wood products by recreationists are allowed, usually as fuel for campfires, except where specifically excluded.

The Moab FO has conducted a number of pinyon-juniper treatment projects, primarily completed in the 1960s and 1970s, in which a total of 28,117 acres were treated, in 18 separate projects. The projects were conducted to remove pinyon-juniper, and convert woodlands to grasslands for livestock and wildlife forage. Many of these project areas are now in need of re-treatment because of subsequent re-growth of pinyon-juniper, which will be primarily managed through the Moab FO Fire Program. Re-treatment will consist of prescribed burning and/or other types of mechanical treatments to reduce fuel loads.

The Hazardous Fuels Reduction Program (Program 2823), as part of the Moab FO Fire Program, is projected to indirectly increase woodland health by approximately 2,500 acres each year for the next five

years. Woodland health would be improved by reducing canopy cover and stand density through thinning and reseeding treated areas with native vegetation (BLM 2002).

18.3.1 Allocations

There is little ground-truthed woodland and timber inventory data for the planning area. Information in the following table is derived from GAP satellite data and GIS spatial analysis. Condition classes for woodland and timber resources are based on field observations, Moab FO experience with the resource, and resource estimates. Table 18-1 shows the estimated number of acres for each Condition Class within the planning area.

Table 18-1. Woodland/Timber Acres and Condition Classes

Woodland/Timber Species	Acres	Condition Class 1 ¹	Condition Class 2	Condition Class 3
Juniper	247,112			
Pinyon	74,390			
Mixed Pinyon -Juniper	227,703			
Woodland Total Acres	549,205	0	300,000	249,205
Ponderosa Pine	4,845			
Mixed Spruce/Fir	35			
Mountain Fir	366			
Aspen	1,350			
Mixed Aspen/Conifer	428			
Timber Total Acres	7,024	0	6,000	1,024

Source: BLM 2002.

¹For a description of Condition Classes, see Table 18-3.

18.3.2 Uses

There is limited information on the current level of woodland harvesting. What information is available is based on woodland harvesting permits sold by the Moab FO. Table 18-2 shows the number and types of sales in the past three years. The actual levels of woodland harvesting within the planning area are unknown because: 1) resource monitoring is very limited; 2) the planning area is large, remote, and difficult to access; and 3) it is assumed that some local residents often cut wood without purchasing a permit (Jackson 2003).

There have been no commercial timber sales and none are anticipated in the future because of the limited extent, remoteness, and inaccessibility of the resource.

18.3.3 Current Conditions

In general, the woodland and forest resources in the planning area are in a stressed and unhealthy condition (Table 18-3). Over the past 100–125 years, grazing and fire suppression have altered the structure and species composition of these woodlands, allowing the development of closed canopies with little understory vegetation present, decreasing biodiversity, and often resulting in increased soil

Table 18-2. Woodland Resource Sales

Commodity (Unit), Price	FY 2000		FY 2001		FY 2002	
	Quantity	Sale Price	Quantity	Sale Price	Quantity	Sale Price
Fuel Wood (cord), \$5.00 per cord	209	\$1,045	252	\$1,260	196	\$980
Posts/Poles (number), \$0.20–\$0.50 each	3,095	\$604	2,760	\$597	2,760	\$552
Christmas Trees (number), \$5.00 each	194	\$970	128	\$640	183	\$915
Live Pinyon Transplants	307	\$653	120	\$271	75	\$150
Other Live Transplants (number), \$0.25–\$3.00 each	214	\$231	988	\$524	40	\$45
Seed Permits (lb), \$0.20–\$1.75 per lb	1,890	\$378	525	\$125	4,183	\$3,332
Boughs (ton), \$5.00 per ton	10	\$50	17	\$85	4	\$20
Total	7,919	\$5,931	6,791	\$5,503	9,443	\$7,996

Source: BLM 2002.

erosion. These same land use management scenarios in the upper Book Cliffs have resulted in the build up of thick fuel ladders and dense ground litter that support large-scale, catastrophic, stand-replacing wildfires, indirectly producing devastating floods and losses of topsoil. Anecdotal evidence suggests that pinyon and juniper stand densities have increased, and have expanded upslope into ponderosa pine forests and downslope into grass and shrub communities. Juniper-pinyon stands have increased in density in some areas to support large-scale crown fires (BLM 2002).

With the onset of extreme drought conditions throughout much of the southwestern U.S. over the past five years, drought related stress has made the woodlands more susceptible to epidemic level disease and insect infestations, further contributing to fuel loading of dead/down wood. The current level of insect infestation of pinyon pine stands by bark beetles throughout many areas of the Southwest is rapidly becoming a concern in the Moab area. Presently, it is unknown how rapidly the infestation is spreading or its extent. Based on similar infestations in other resource management areas, the infestation could cause a significant loss of woodland resources in the planning area in a relatively short time.

These conditions are also increasing the potential for uncontrolled, catastrophic wildfires. It is expected that noxious weed species, notably cheatgrass, could replace woodland species in those woodland areas that are burned by large-scale, uncontrolled wildfire.

Cottonwood stands are diminishing within the planning area at an unnaturally rapid rate. The causes for the reduction of this resource are 1) the spread of tamarisk (*Tamarix* spp.), which indirectly prevents the transplantation of cottonwood seedlings by entrenching river and stream systems; and 2) the

Table 18-3. Description of Woodland and Timber Condition Classes

Class	Description
Condition Class 1	Human activity has not significantly altered historical fire regimes, or adequate land management activities have successfully maintained ecological integrity. These areas pose relatively low public safety and ecological risks, and need little corrective management. However, current maintenance management actions such as prescribed fire need to continue.
Condition Class 2	Human activity has moderately altered historical fire regimes, and/or land management actions have been ineffective, partially compromising ecological integrity. One or more fire turn intervals have been missed, resulting in moderate increases in fuel load and fire size, intensity, and severity. These areas pose a moderate public safety risk and ecological risk from severe fire, and need moderate levels of restoration treatments (e.g., mechanical fuel removal, prescribed fire). Without any management treatments, these lands will degrade into Condition Class 3. Continued maintenance treatments following restoration are also needed to prevent severe fires and sustain ecological integrity.
Condition Class 3	Ecological integrity has been significantly compromised, and fires pose a high risk because of their potential risk to human values (public safety and health, property, economies) and natural resource values (watersheds, species composition). Several fire return intervals have been missed, resulting in considerable accumulation of live and dead fuels, and increasing the potential of high-severity fires. These lands pose the greatest risk to public safety and in the most danger of ecological decline. They require extensive restoration and diligent maintenance.

Source: NIFC 2001.

preferential use of cottonwood by recreationists (who camp near streams and shade) for firewood. In many of these high-use recreation areas, recreationists have stripped live cottonwood trees, thereby denuding these areas of woodland vegetation (BLM 2002, Jackson 2003).

18.4 RESOURCE DEMAND AND FORECAST

18.4.1 Trends

Most of the woodland product sales have remained relatively constant and the trend is stable, with firewood cutting as the primary use of the resource. The trend for use of all woodland products is directly related to population growth in the surrounding communities.

18.4.2 Demands

The area of greatest population growth is near the Grand Junction, Colorado area, where woodland products at the base of the Book Cliffs are expected to increase in the coming years. Based on permit information, there is a trend toward an increased demand for live seed, restoration of wildlands, and fire rehabilitation (see Table 18-2). It is also expected that additional demands will occur for live transplants of woodland vegetative products utilized for xeriscape landscaping.

18.5 CONSISTENCY WITH NON-BUREAU PLANS

18.5.1 USDA Forest Service – Manti-LaSal National Forest

There is no coordination between or consistency with the USDA Forest Service and the Moab FO, with the exception of fuel reduction prescribed burns. Burns are coordinated on a case-by-case determination of need.

18.5.2 Grand County

The Grand County General Plan states (Policy Statement 4) that "federal and state land planning and management decisions affecting Grand County should be consistent with" the County Plan. Federal law requires the BLM to consult with Grand County when formulating plans or making land use decisions (Grand County 1996).

18.5.3 Tribal

There is no woodland resource coordination between the Bureau of Indian Affairs and the Moab FO.

18.6 ISSUES OR CONCERNS

In response to the concerns regarding the loss of woodland resources adjacent to high-use recreation areas, the Moab FO has initiated wood gathering closures in these areas to allow the vegetation to restore itself. The Moab FO is also in the process of prohibiting wood gathering from riparian areas, and considering closing these areas to camping, in an attempt to preserve the existing cottonwoods in these areas.

Monitoring of woodland resources is infrequent and limited. Fire personnel occasionally measure fuel loads, but information on the condition of woodland resources in the planning area is extremely limited, as is woodland inventory information.

There are concerns about epidemic levels of insect infestations and the overall condition of the woodlands resource. As described above, the resource has become highly altered from what is considered an historical, natural condition (Condition Class 1). Related to this concern regarding resource conditions are the woodland management constraints within Wilderness Study Areas (WSAs).

18.7 MANAGEMENT OPPORTUNITIES AND LIMITATIONS

18.7.1 Woodland Resource Inventory

An inventory of the entire planning area would provide essential information for future management of the resource. In fact, a comprehensive woodland inventory is an essential precursor to future management of the resource. With an accurate, current woodlands resource inventory, resource use could be directed to those areas with the greatest need for intensive management, and fuel loads could be assessed (and Condition Classes could be determined) to identify those areas with the greatest need for prescribed burning or other fire management techniques. Inventory data would assist with setting woodlands harvest limits, and determining the sustained yield that would assist in restoring woodlands to a healthy, stable condition, not subject to severe disturbances and fluctuations.

18.7.2 Pretreatment Prior to Prescribed Burning

Some areas designated for prescribed burning may benefit from other woodland improvement techniques before burning in order to improve woodland health. Management opportunities might include reducing fuel loads within prescribed burn areas through firewood sales or commercial woodland sales.

Other opportunities would be 1) consider designating some areas for free firewood cutting, with proper monitoring, to reduce fuel loads; and 2) develop a woodland thinning program.

18.7.3 Prescribed Burning

Prior to prescribed burning, there should be coordination with the Woodlands program to determine fuel loads within the planning area with the purpose of improving woodland health. Those areas with the highest potential for large-scale catastrophic wildfire should be considered for treatment.

18.7.4 Commercial Woodcutting

Reassess the need for commercial woodcutting of pinyon and juniper. At present, commercial cutting of woodland resources is minimal. Commercial cutting should be considered an option in reducing hazardous fuel loads, promoting woodland health, and helping to stabilize and create a sustainable woodlands resource.

18.7.5 Coordination between Adjacent Jurisdictional Agencies

Memorandums of Understanding (MOUs) should be considered between the Moab FO and the Manti-LaSal National Forest District, the Ute and Navajo Indian Tribes, Grand County, and the National Park Service to coordinate prescribed burning or fuel harvesting along the boundaries between the Moab FO and non-BLM-administered public lands. The MOUs would assist with conflict resolution between these entities.

18.7.6 Limitations

WSA constraints limit the ability of the Moab FO to reduce fuel loading, improve stand health, and reduce the potential for catastrophic loss of the resource. Of the approximately 549,205 acres of pinyon-juniper woodlands within the planning area, 297,660 acres lie within various proposed wilderness areas. This leaves approximately 251,545 acres (approximately 46 percent of pinyon-juniper woodlands) available for woodlands resource restoration management. Similarly, of the 7,024 acres of forest lands managed by the Moab FO, 3,662 acres (approximately 52 percent) are eligible for restoration management.

Lack of funding limits woodland resource monitoring of sales or treatment areas, restoration and thinning, management of insect infestations, and conducting a comprehensive woodland resource inventory.

18.8 REFERENCES

Grand County. 1996. Grand County General Plan. Grand County, Utah.

Jackson, Lynn. 2003. Personal conversation between Lynn Jackson, Bureau of Land Management, Moab Field Office, Moab, Utah, and David Harris, SWCA Environmental Consultants, Salt Lake City, Utah, 11 March 2003.

National Interagency Fire Center (NIFC). 2001. Review and Update of the 1995 Federal Wildland Fire Management Policy. Report on file at Bureau of Land Management, Office of Fire and Aviation, National Interagency Fire Center, Boise, Idaho. Online version at: http://www.nifc.gov/fire_policy/docs.

U.S. Bureau of Land Management (BLM). 1983. The Proposed Resource Management Plan and Final Environmental Impact Statement for the Grand Resource Area, Moab District, Utah. Bureau of Land Management, Grand Resource Area, Moab, Utah.

_____. 2002. Forest and Woodland Management Action Plan. Bureau of Land Management, Moab Field Office, Moab, Utah.